

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

8. (Currently Amended) A method of mutating a gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a-sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the ~~sperm with UV light; and~~treated sperms with UV light to form a crosslink between a DNA double helix and the psoralen derivative;
- c) ~~subjecting the irradiated sperm to artificial fertilization, fertilizing eggs of the vertebrate animal with the irradiated sperms in vitro; and~~
- d) ~~growing the fertilized eggs to embryos of mutant having a gene having small deletion of a plurality base pairs around the crosslinked site in a genome.~~

9. (Cancelled).

10. (Currently Amended) The method of claim 8, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

11. (Previously Presented) The method according to claim 10, wherein the vertebrate animal is zebrafish.

12. (Previously Presented) The method according to claim 8, wherein the mutation is introduced into a region containing a pyrimidine base.

13. (Currently Amended) A method for preparation of a mutated gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a-sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the treated sperms with UV light to form a crosslink between a DNA double helix and the psoralen derivative; and
- c) subjectingfertilizing an egg of the vertebrate animal with the irradiated sperm to artificial fertilization;in vitro; and
- d) growing the fertilized eggs to embryos of mutant having a gene having small deletion of a plurality of base pairs around the crosslinked site in genome.

14. (Cancelled).

15. (Previously Presented) The method according to claim 13, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

16. (Previously Presented) The method according to claim 15, wherein the vertebrate animal is zebrafish.

17. (Previously Presented) The method according to claim 13, wherein the mutation is introduced into a region containing a pyrimidine base.

18. (Currently Amended) A method for analyzing a function of a gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a-sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the treated ~~germ cells~~sperms with UV light to form a crosslink between a DNA double helix and the psoralen derivative;
- c) subjectingfertilizing an egg of the vertebrate animal with the irradiated sperm to artificial fertilization;in vitro;
- d) growing the fertilized eggs to a mutant having a mutated gene having a small deletion of a plurality base pairs around the crosslinked site in a genome;

d) ~~comparing phenotype of a mutant having the mutated gene~~) comparing phenotype of the mutant with that of a wild type of the vertebrate animal to find ~~the~~ difference of phenotype between the mutant and the wild type;

e) ~~determining~~) cloning the mutated gene; and

f) ~~g) analyzing functions of a gene of the vertebrate animal corresponding to the mutated gene from the said differences of phenotype~~ difference of phenotype between the mutant and the wild type.

19. (Cancelled).

20. (Previously Presented) The method according to claim 18, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

21. (Previously Presented) The method according to claim 20, wherein the vertebrate animal is zebrafish.

22. (Currently Amended) The method according to claim 18, wherein the mutation is introduced into a region containing a pyrimidine base.